

REMARKS

In responding to the Office Action, the claims have been amended by rewriting claims 1, 6, 8, 11, 13-15, and 18, canceling claims 4, 7, 9-10, 12 and 16-17, and adding claims 19-20. Applicant respectfully requests further examination and reconsideration of the application, in view of the foregoing amendments.

Objections to Drawings

The Examiner objected to the drawings as failing to comply with 37 C.F.R. § 1.84(p)(5) because the following reference signs are not mentioned in the description: 30-31 (figures 1 and 2); w (figure 2); 460 (figures 10a and 10b); 490 and 492 (figure 10b); and, 472 (figure 10a). New figures are being provided removing these reference signs from the drawings. Withdrawal of this objection is respectfully requested.

Examiner also objected to the drawings because reference signs 20 and 162 were not shown in the drawings. Figure 1 has been amended to include reference sign for portion 20, and reference sign 162 has been deleted from the specification.

The drawings have also been objected to as failing to comply with 37 C.F.R. § 1.84(p)(5) because reference sign 462 has been used to designate both the profile and the hanger. A new drawing sheet for Figures 10A and 10B is included with this response, illustrating reference numeral 461 as the profile. The specification has been amended to correspond to this amendment.

The Examiner has also indicated that a legend such as "Prior Art" should be included in Figures 3 and 4, because only that which is old is illustrated. A new drawing sheet with the

suggested "Prior Art" legend is being provided with this response. Withdrawal of this objection is respectfully requested.

Objection to the Specification

The Examiner has required that reference to the provisional application should be included at the beginning of page 1 of the application. Applicant has amended the specification to overcome this objection.

Examiner has also noted that reference numeral "162" on page 7, line 10, "170" on page 8, last line, and "464" on page 9, line 24, should be "54", "80", and "462", respectfully. Applicant has amended the specification to correct these notations.

Rejection Under 35 U.S.C. § 112

Claims 11-15 and 18 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as his invention. With respect to claim 11, the Examiner has indicated that the term "said hook" lacks clear antecedent basis, and has suggested amending it to "said hook member." The Examiner has noted the similar terms in claims 12-15 and 18. Claim 12 has been cancelled, removing any rejections thereto. Applicant has amended claims 13-15 and 18 to overcome this rejection.

In regard to claim 18, the Examiner has noted an inconsistency between the base preamble and the term "hook hanger" in claim 18. The Examiner has noted similar situation with respect to claims 16 and 17. The Examiner has also noted that the phrase "an space"

should be "a space" in claim 18. Applicant has amended claim 18 to overcome this rejection.

Rejection Under 35 U.S.C. § 102

Claims 1-13 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Becker, U.S. Patent No. 3,917,338. The Examiner states that Becker teaches a hook retainer for a cargo transport including a track, a tie-down anchor assembly, and a tie down strap member with an attached hook.

Becker teaches a tie down system for use generally with a cargo container such as the cargo receiving portion of a box truck. Becker's cargo tie down means comprises an elongated anchor plate 30 slidably connected to a support post 28 which is attached to the outer wall 16 of the cargo container. A plurality of the post and anchor assemblies support the container walls. (See Becker column 2, lines 56-61.) The lading tie down means or strap is attached to anchor plate 30 by a T-shaped fastener or hook 54. The T-shaped fastener is retained by anchor plate 30, by inserting hook 54 into slot 34 of plate 30, and turning the fastener 90 degrees.

Distinguished from this, applicant's tie down system includes a hook hanger which is adjustably positioned on a mounting track. The hook hanger includes a mounting bracket and a hook anchor. The hook anchor has a channel which slidably receives a hook member attached to the tie down member, such as a strap. This channel can best be seen in Figure 7. The hook member is slid into the channel, and, a retaining member, such as the retaining bar 70 is positioned so that the hook member will not disengage from the channel. The structure as now set forth in Claim 1 is not taught nor made obvious by Becker, either alone or in

combination with other cited art. Further, as now set forth in Claim 6 due to the configuration of the channel, the hook cannot readily be vertically removed from this channel. As such, hook member is retained within channel, and essentially affixed to the cargo carrying area, without additional retaining means.

Becker further does not anticipate nor make obvious amended claims 1 and 6 as now claimed. Claims 1 and 6 require a channel for receiving a hook member. Becker does not teach or suggest such a channel. The system of Becker includes a slot which receives a T-shaped fastener, which is retained within the slot by turning the fastener such that the T portion is perpendicular to the slot. Amended claims 1 and 6 are thought to overcome the rejection based upon Becker.

With respect to claim 3, the Examiner states that Becker includes the mounting tracks as broadly claimed. Claim 3 depends from claim 1, which is thought to be in condition for allowance. As such, claim 3 is also thought to be in allowable form. Applicant also notes that Becker only illustrates a U-shaped support member.

In regard to claim 4, Examiner states that Becker comprises a mounting bracket riding on the track and hook hanger/anchor as broadly claimed. Claim 4 has been cancelled removing any rejections thereto.

The remaining pending claims are dependent from either amended claim 1 or 6, which are thought to be in condition for allowance. Further, these claims define structure which is neither shown nor made obvious by Becker. As such, these claims are also thought to be allowable.

The Examiner has rejected claims 1, 3-15 and 18 under 35 U.S.C. § 102(b), as being anticipated by Helton, U.S. Patent No. 5,388,938. Examiner states that Helton teaches a hook retainer for a cargo transport including a track, a tie-down anchor assembly, and a tie down strap member with an attached hook. Applicant respectfully traverses this rejection.

Helton describes a strap hook retainer having a front opening 60 and a rear opening 58. Intermediate front opening and rear opening is a plate 50 which is attached to a handle to allow the plate to freely swing and extend outwardly from the rear opening. To engage and retain strap, the plate is pivoted rearwardly and a strap hook 30 is inserted into front opening and is positioned upon the plate. The plate is then pivoted forward toward the front opening to retain the strap hook within the strap hook retainer. To remove the strap hook, the plate is again pivoted rearwardly to free the hook.

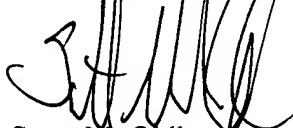
As set forth above, claims 1 and 6 as amended again require a channel which receives the strap hook and a retaining member selectively positioned such that the hook does not slide out of the channel as set forth in claim 1. Further, as set forth in claim 6, even if there is slack in the strap, the hook rotates or pivots but is retained within the channel in the vertical direction. Helton does not teach or suggest a hook hanger having such a channel or these features. To retain the hook within Helton's retainer, an operator must pivot the plate rearwardly, place the hook on the plate, and pivot the plate forward again into the retainer, which is significantly different than the structure or operation of the present invention. As such, claims 1 and 6 as amended are thought to overcome this rejection.

The remaining pending claims are dependent from either amended claim 1 or 6, which are thought to be in condition for allowance. As such, these claims are also thought to be allowable.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSIONS WITH MARKINGS TO SHOW CHANGES MADE."

In view of the above, it is submitted that the claims are in condition for allowance. Applicant respectfully requests reconsideration of the application and withdrawal of the rejections and objections.

Respectfully Submitted,
Hahn Loeser + Parks LLP

A handwritten signature in black ink, appearing to read 'S. Oldham', is written over the printed name.

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VERSIONS WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

New heading and paragraph have been entered before the Field of the Invention heading on page 1:

Statement of Related Application

This application claims the benefit of U.S. Provisional Application No. 60/191,808, filed March 24, 2000.

Paragraph 10 has been replaced with new paragraph 10:

[0010] By referring now to Fig. 2 of the drawings, a transverse section, on an enlarged scale, through the flat bed trailer may be seen and by referring thereto one of the transversely positioned tubular frame members 18 will be seen double welded in the apertures 19 in the webs 11 of the I-beams 10. It will also be ~~see~~ seen that the upper transversely disposed portions 12 of the I-beams 10 form a portion of the floor of the flat bed trailer. Several longitudinal extending compartmented hollow flooring sections 26 are positioned longitudinally of the flat bed trailer in abutting parallel relation with the upper transversely disposed portions 12 of the I-beams 10. The flooring sections 26 are welded to each of the transversely positioned tubular frame members 18 which support the same.

Paragraph 14 has been replaced with new paragraph 14:

[0014] Turning now to Fig. 5-6, a first embodiment of the tie down coupling system 50 according to the invention is shown. As seen in Fig. 7, the assembly 50 is shown as a hook

hanger for engagement of a flat hook 80 type of retaining member positioned on the terminal end of a cargo restraining strap 82 or the like. Hook hanger 50 is slideably attachable to winch rail 84 or other suitable track or mounting structure. The mounting rail or track 84 may be similar to winch tracks used for sliding webbing winches, and may be integrated into a portion of the trailer body 86 or a separate member selectively attached such as by welding to the trailer or other vehicle. The hanger system 50 comprises a body 52 having a mounting bracket 54 having a cross sectional profile conforming to winch rail 84. In the embodiment shown in Figs. 5 and 6, the bracket 54 has a profile conforming to the I-beam type of mounting track 84 in substantially the shape of a "C" and has engaging arms 56 which mount to the track 84 as seen in Fig. 7. Once mounted on the track 84, the system 50 is thus slideable along the track 84 to any desired position along the length of track 84, depending upon the particular application. To facilitate movement of the body 52 along the length of the track 84, a cutout portion 58 may be provided in the C-shaped channel, to resist binding when the body 52 is repositioned. ~~The body 52 a winch rail. Slideable bracket 162 is slideable along the entire length of winch rail 38 as is thus positionable at any position~~

Paragraph 17 has been replaced with new paragraph 17:

[0017] It is also desirable to prevent horizontal movement of the hook from its proper engagement with the body member 50. A retaining bar 70 is configured for pivotable movement with respect to a mounting position 72. In a locking position as shown in solid in Fig. 5, the retaining bar 70 extends across the opening 67 on opposing sides of body 52. In this position, a hook 80 positioned in the opening 67 will be positively retained in space 67,

regardless of the tension applied to the strap **82** or hook **80**. The retaining bar **70** is then easily pivoted to a disengaging position as seen in ghost in Fig. 5, for insertion or removal of the hook **80** from space **67**. The bottom wall **68** of the hook retainer assembly **64** may have a stop **69** to position retaining bar **70** in the locking position as shown in Fig. 5. An alternative embodiment of the hook retaining features of the invention is shown in Fig. 5A, wherein a similar body member **152** includes a similar vertical hook retaining structure and an alternative horizontal hook retainer bar **170**. The horizontal-movement retainer **170** comprises first and second retainer leg members **174** and **176**, and a connecting portion **175**. First and second retainer leg members **174** and **176** form a notch in conjunction with the connecting portion **175** which engages the wall **165** of the retainer assembly **164** and a stop or boss **167** formed on the back side thereof. The arm **174** is thus positioned to prevent substantial horizontal movement of hook ~~**170**~~ **80** relative body **152** and to positively engage the hook similarly to the embodiment of Fig. 5. Retainer leg members **174** and **176** are then pivotable upward to the position as shown in ghost to allow manual insertion and removal of the hook in a manner similar to the prior embodiment. Horizontal-movement retainer **170** is thereby rotatable between open and closed positions. In the closed position, horizontal-movement retainer **170** may be locked in position. In the embodiment shown, arm **176** abuts locking ridge **167**. When horizontal-movement retainer **170** is in the closed position, the arm **176** is snap fit against locking ridge **167**, thereby locking horizontal-movement retainer in place. Locking arm **176** also serves as a handle to assist in manual movement of horizontal-movement retainer **170** between the open and closed positions.

Paragraph 18 has been replaced with new paragraph 18:

[0018] Other embodiments of the hook hanger of the present invention are possible as would be appreciated by one of ordinary skill in the art. Figs. 8 -10 illustrate possible alternative embodiments of the tie down coupling system according to the invention. In Fig. 8, the hook hanger 260 has a mounting bracket profile 262 conforming to a double-L type mounting track 238. Hook hanger 260 may be similar to the previous embodiments in other respects. Figure 9 illustrates an alternative embodiment showing hook hanger 360 having a mounting bracket profile 362 conforming to a C-channel type mounting track. Figs. 10A and 10B illustrate an alternative embodiment as hook hanger 462. In the embodiment shown in Fig. 10A, hook hanger 462 includes a mounting bracket profile ~~462~~ 461 conforming to a double-L type mounting track. Hook hanger 462 also includes hook anchor 464, constructed from bar stock and connected at either end to leg members 474 and 476. Leg members 474 and 476 form substantially parallel planes on either end of hook anchor 464. Also included in hook hanger 462 is vertical-movement retainer 468. Vertical-movement retainer 468 is constructed from bar stock and is positioned with each end connected to leg member 474 and 476 respectively. Hook anchor 464 may be offset at an angle from a horizontal axis of hook hanger ~~464~~ 462 to better accommodate a hook under tension securing a load on a truck. Leg members 474 and 476 function both as a frame to support hook anchor 464 and together as a horizontal-movement retainer to prevent substantial horizontal movement of a hook with respect to hook anchor 464. Vertical-movement retainer 468 includes surface 469 which functions to block substantial vertical movement of a hook with respect to hook anchor 464. Hook anchor 464

and vertical-movement retainer 468 are positioned such that sufficient clearance is provided to allow easy accessibility of a hook to hook anchor 464, and easy manual insertion and removal of a hook from hook anchor 464 upon appropriate manipulation of the hook. Other profiles are possible as would be appreciated by one of ordinary skill in the art.

In the Claims:

Claim 1 has been amended as follows:

1. A tie down system for use with a vehicle, said tie down system comprising:
at least one mounting track associated with at least one side of a cargo carrying area;
at least one tie down member having one end fixed in a position on an opposing side of said at least one side, said tie down member having a terminal end with a ~~coupling device thereon~~
hook member;
at least one ~~tie down anchor assembly~~ hook hanger, said at least one ~~anchor assembly~~ hook hanger adjustably positioned in association with the mounting track at a location to allow the ~~coupling device~~ hook member to be positively retained in association with the anchor assembly over said cargo carrying area;
said hook hanger comprising a mounting bracket having a mounting profile conforming to said at least one mounting track, and a hook anchor having a channel for slidably receiving said hook member, and a retaining member selectively positioned such that said hook member will not disengage from said channel.

2. The tie down system of claim 1, wherein mounting tracks are provided on both sides of

the cargo carrying area.

3. The tie down system of claim 1, wherein said at least one mounting track is selected from the group consisting of double-L mounting tracks, C-channel mounting tracks, and integral mounting tracks formed in association with said vehicle.

Claim 4 has been cancelled without bias or prejudice.

5. The tie down system of claim 1, wherein said at least one tie-down member is selected from the group consisting of straps, ropes, chains, cables, and wires.

Claims 6 through 12 have been cancelled without bias or prejudice.

6. A tie down ~~coupling~~ system for a cargo control system, comprising:

a body member secured in a desired position relative to at least one tie down member of a cargo control system, the tie down member having a ~~coupling device~~ hook member associated therewith; and

said body member comprising a retention channel for insertion of at least a portion of said hook member of the tie down member, wherein said retention channel prevents substantially vertically oriented disengagement of said hook member regardless of the tension applied to said tie down member.

~~a coupling anchor associated with said body member to receive said coupling device and positively retain said coupling device with said body member regardless of the tension applied to said tie down member.~~

Claim 7 has been cancelled without bias or prejudice.

8. The tie down ~~coupling~~ system of claim 6, wherein said body member has a mounting

structure for selective mounting at a desired position ~~relative to said cargo control system.~~

11. The tie down ~~coupling~~ system of claim 6 ~~7~~, further comprising a hook retainer which substantially maintains the horizontal position of said hook relative to said retention channel ~~hook anchor.~~

~~12. The tie down coupling system of claim 11, wherein said hook retainer comprises:
a vertical movement retainer capable of preventing substantial vertical movement of
said hook.~~

13. The tie down ~~coupling~~ system of claim 1 ~~11~~, wherein said hook hanger ~~retainer~~ comprises:
a horizontal-movement retainer capable of preventing substantial horizontal movement of said hook member relative to said body member.

14. The tie down ~~coupling~~ system of claim 11 ~~13~~, wherein said ~~horizontal movement~~ hook retainer comprises a retaining bar which is selectively positionable to prevent movement of said hook member out of engagement with said retention channel ~~hook anchor.~~

15. The tie down ~~coupling~~ system of claim 13 wherein said ~~horizontal movement~~ hook retainer is ~~rotatable~~ positionable between a hook mounting position and a hook retaining position.

18. The tie down system ~~hook hanger~~ of claim 1 ~~12~~, wherein said ~~vertical movement~~ ~~retainer~~ hook hanger comprises ~~a hook retainer assembly comprising~~ a first wall positioned in spaced apart relationship to said hook anchor to form ~~an space~~ said channel adjacent said hook anchor in which a portion of said hook member is received and a second wall extending

toward said hook anchor to form an opening, wherein said second wall is positioned to contact the hook prior to release from the hook anchor to maintain engagement of the hook member with the hook hanger ~~body member~~.

The following new claims have been added:

19. The tie down system of claim 14, wherein said hook retainer comprises first and second retainer leg members, said first retainer leg member effectively restricting substantial horizontal movement of said hook in one horizontal direction, and said second retainer leg member effectively restricting substantial horizontal movement of said hook in the opposite horizontal direction.

20. The tie down system of claim 14, wherein said hook retainer is lockable in a hook retaining position.

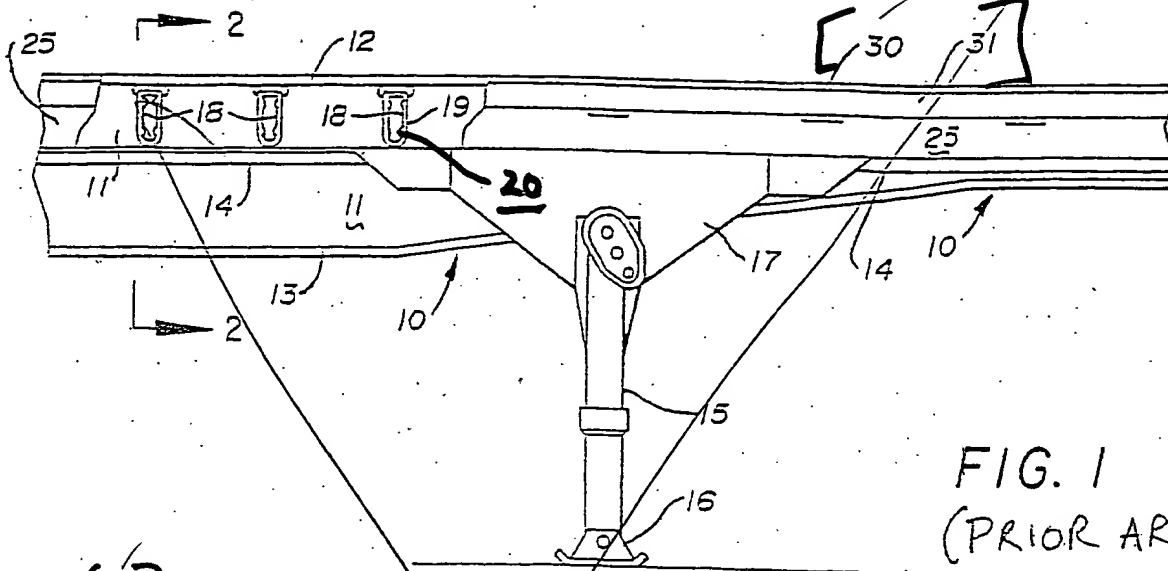


FIG. 1
(PRIOR ART)

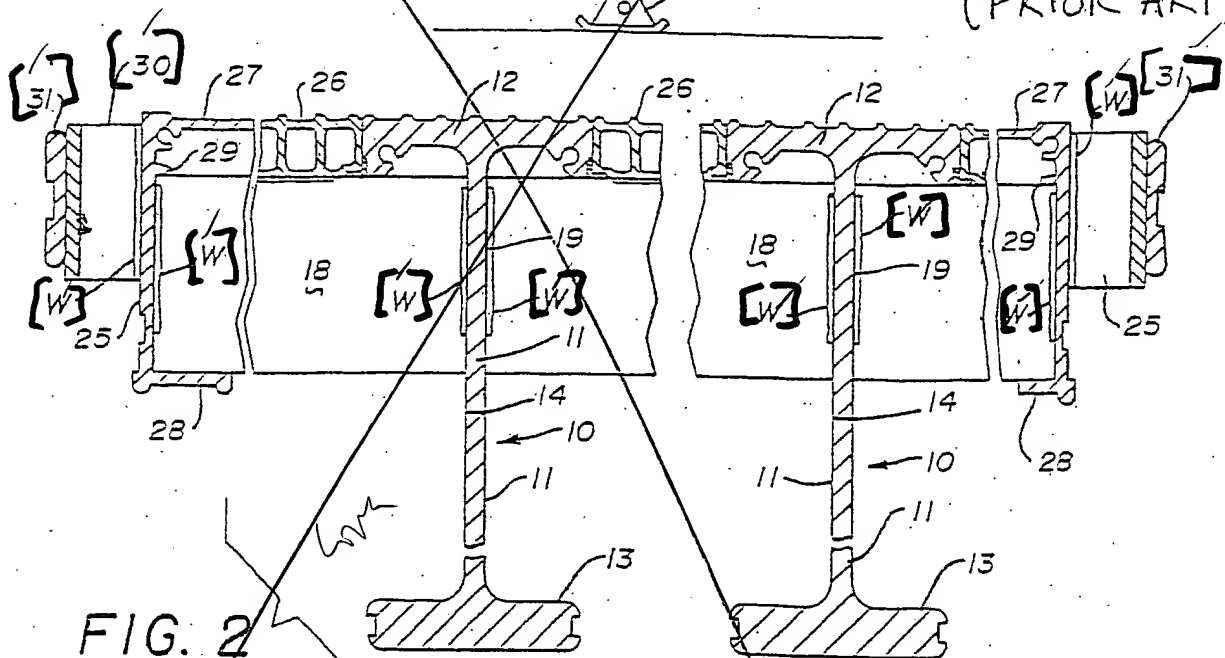


FIG. 2
(PRIOR ART)

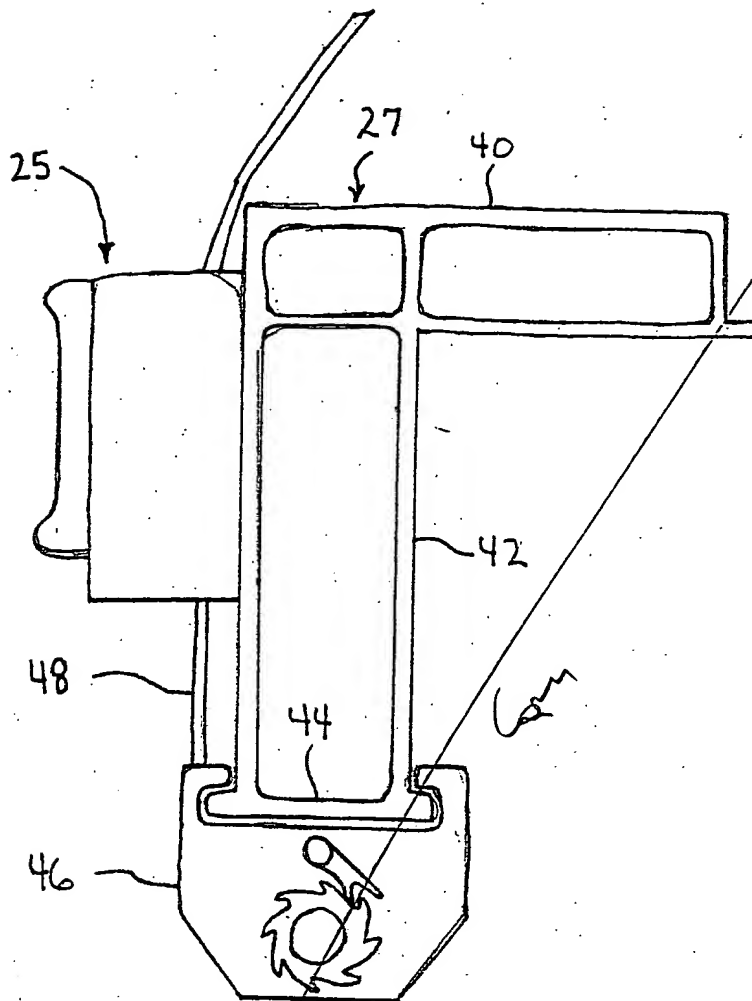


FIG-3
(Prior Art)

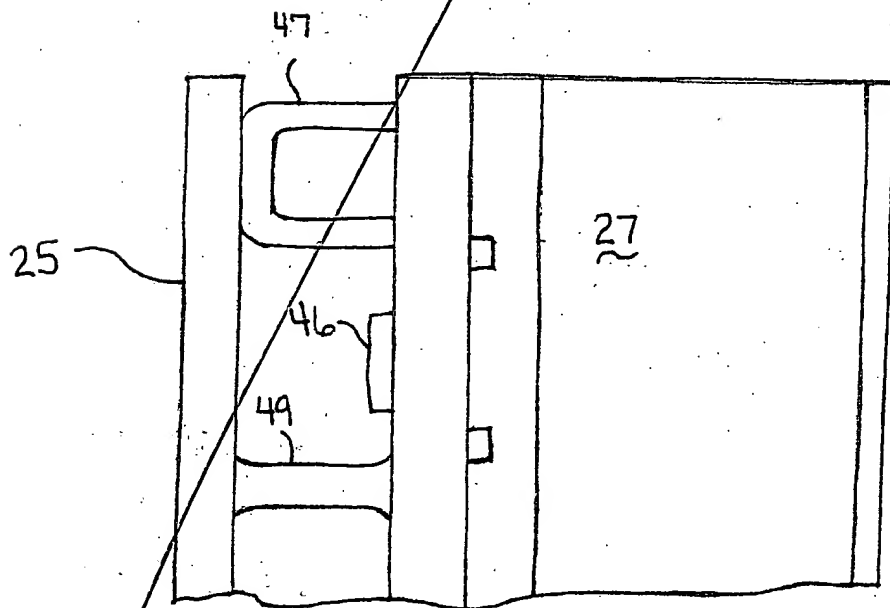


FIG-4
(Prior Art)

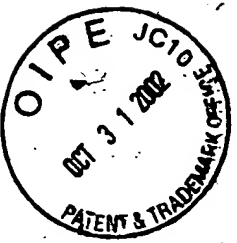


FIG-10A

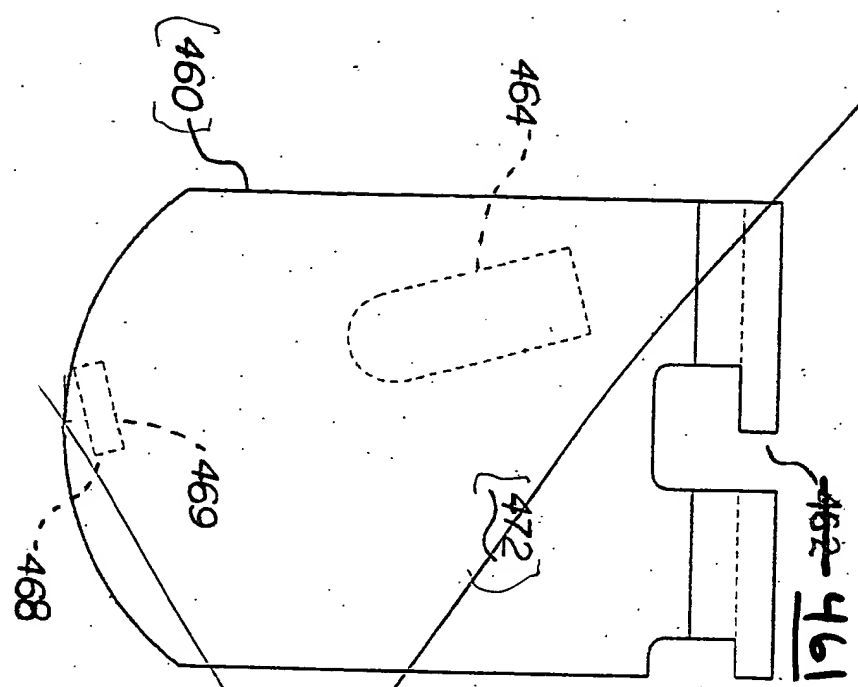


FIG-10B

